

TECHNIC INC

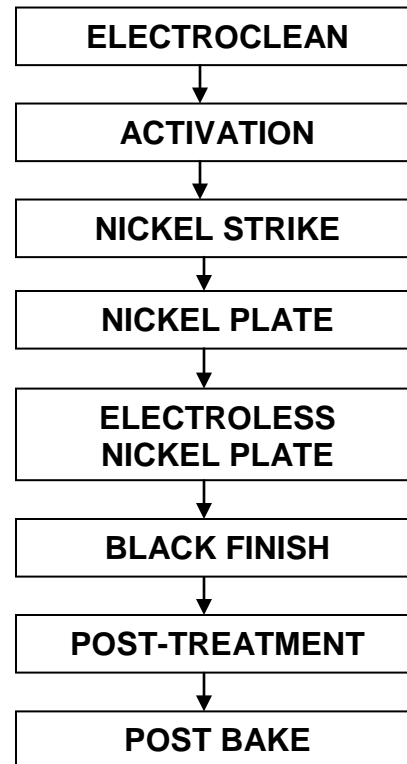
PROCESS APPLICATION GUIDE

BLACK FINISHES FOR RACK PLATING APPLICATIONS

PLEASE NOTE: This document is for guidance only. Please refer to the appropriate Technical Data Sheet for additional information.

Rev 0515

Process Flow



BLACK FINISHES IN RACK PLATING APPLICATIONS

Process Step	Recommended Process	Description	Process Makeup	Temp	Current Density	Dwell Time	Recommended Control and Replenishment Schedule	Comments
Electroclean	Technic TEC 1016	Electrolytic cleaner	Technic TEC 1016: 15-45 g/l DI water: balance	60-71°C	Steel, copper, brass: 6-9v anodic Non-ferrous metals 4-6v cathodic	1 minute	Renew solution when contaminated	Alkaline low foaming; chelated. Rapidly removes oils, grease, and other contaminants
Activation	50% hydrochloric acid	Activation of stainless steel substrates	500 ml/l hydrochloric acid DI water: balance	RT	N/A	1 minute	Maintain by volumetric titration	Prepares surface for nickel plate. Improves adhesion of nickel on difficult to plate substrates.
	OR 10% sulfuric acid	Activaton of brass substrates	100 ml/l sulfuric acid DI water: balance	RT	N/A	1 minute	Maintain by volumetric titration	Prepares surface for nickel plate.
Nickel Strike	Woods Nickel Strike	Nickel strike	Nickel Chloride (180 g/l) Hydrochloric acid 130 ml/l DI water: balance	RT	10 ASD	2 minutes	Maintain by volumetric titration	Improves adhesion of nickel on difficult to plate substrates.
Level Nickel Plate OR	Goldeneye Level Nickel - Rack	Proprietary level nickel plating process	Goldeneye Nickel Conc: 300-450 ml/l Goldeneye Nickel Makeup Solution: 500 ml/l Boric acid: 50 g/l Goldeneye Nickel Stress Reducer: 20 ml/l Goldeneye Nickel Leveler 2712: 15 ml/l HN-5: 5 ml/l DI water: Balance	60-68°C	2.5-10 ASD	As required	Replenish based on analysis	Recommended for high gloss applications.

Process Step	Recommended Process	Description	Process Makeup	Temp	Current Density	Dwell Time	Recommended Control and Replenishment Schedule	Comments
Satin Nickel Plate	Goldeneye Satin Nickel	Proprietary satin nickel plating process	Goldeneye Nickel Conc: 750 ml/l Goldeneye Nickel Makeup Solution: 50 ml/l Boric acid: 30 g/l Goldeneye Nickel Stress Reducer: 3 ml/l Goldeneye Satin Nickel Additive: 0.8 ml/l HN-5: 5 ml/l DI water: Balance	55-65°C	5-15 ASD	As required	Replenish based on analysis	Recommended for semibright / reduced gloss applications.
Electroless Nickel Plate	Techni EN 8200	Mid Phos (6-8%P) Electroless Nickel process	Techni EN 8200 A: 60 ml/l Techni EN 8200 B: 150 ml/l DI water: Balance	87-90°C	NA	30 minutes	Replenish Techni EN8200A and Techni EN8200D based on nickel concentration	RoHS-compliant bright, high speed electroless nickel, specifically formulated for black finish applications.
Black Finishing	Techni 8085	Post-plating immersion process to darken electroless nickel deposits	Techni 8085 Concentrate: 500 ml/l DI water: balance	RT	NA	70 sec	Not recommended.	Designed for use with Techni EN8200 to produce a consistent black finish with excellent conductivity and wear resistance.
Post-Treatment	Techniseal	Cathodic passivation process for use on black electroless nickel coatings	Techniseal Conc: 250 ml/l DI water: Balance	24-45°C	3-7 V	90-120 sec	Maintain 5-6° Bé with Techniseal Concentrate	Used with Techni 8085 to improve appearance and corrosion resistance
Post Bake				300°C	NA	90 min +30/-15 at temp ⁽¹⁾	NA	A critical component of the process which insures color consistency and scratch resistance.

(1) In order to obtain optimum results, it is imperative that Post Bake minimum time and temperature conditions are adhered to.

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